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A Quality Evaluation Framework for Digitalized Courses in Swedish Higher Education: Policy Alignment, Secure Digital Infrastructure, and Faculty Digital Competence

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Abstract

Background: Swedish higher education has moved quickly from national digitalization policy to everyday digital teaching. Yet the quality of digitalized courses is still judged mainly through student satisfaction surveys and institutional checklists, which say little about what faculty experience in the classroom. This paper develops a framework for evaluating digitalized course quality that is grounded in Swedish faculty perspectives and linked explicitly to the policy context.

Methods: A qualitative evidence synthesis was conducted on seventeen sources. These comprised Swedish empirical studies from university, teacher education, police education and medical education; Swedish and European policy analyses; international quality standards; and, as contextual sources, two technical studies on secure data handling in industrial systems. Each source was coded deductively and inductively against emerging dimensions of course quality, and dimension frequencies were calculated from the coding matrix.

Results: The synthesis produced the Policy-to-Classroom Quality (P2C-Q) framework with six dimensions: policy alignment and governance; institutional infrastructure, support and data security; faculty professional digital competence; pedagogical and course design; digital assessment and feedback; and student experience and interaction. Across the fifteen education sources, infrastructure and support, faculty digital competence and pedagogical design were the most frequently addressed dimensions (9 of 15 sources each, 60.0%), while digital assessment was the least addressed (3 of 15, 20.0%). Faculty perceived quality as produced in the translation between policy intentions and local conditions rather than as a property of technology alone.

Conclusions: Evaluation of digitalized courses should treat faculty as interpreters of policy, examine the institutional conditions under which they work, give digital assessment far more attention, and combine faculty and student evidence. The P2C-Q framework offers practical evaluation questions and indicators for institutions, quality assurance units and course leaders.

Keywords: digital education policy; digitalized course quality; faculty perspectives; professional digital competence; Swedish higher education

1 Introduction

Digitalization has become one of the defining features of Swedish education policy over the past two decades. National strategies have repeatedly framed digital technology as a lever for equity, efficiency and modernization, and these ambitions have moved steadily from general information and communication technology initiatives towards more specific expectations about teachers' digital competence

and the digital organization of teaching (Gu and Lindberg, 2021). In parallel, European bodies have encouraged member states to design digital education policies that are coherent, evidence-informed and attentive to implementation, rather than policies that simply supply equipment (Conrads et al., 2017). Sweden is therefore an instructive case: it combines high levels of digital infrastructure with a strong policy commitment to digital education, while also offering a growing body of research on how teachers and faculty experience that commitment in practice. The COVID-19 pandemic accelerated this movement dramatically. Teaching that had been planned for campus was moved online in a matter of days, and many teachers found themselves designing and running courses in formats for which they had received little preparation (Bergdahl and Nouri, 2021). What began as emergency remote teaching has since left a lasting imprint. Digital and blended formats are now a stable part of provision in Swedish universities, professional education programs and national continuing education, including national didactic courses for medical residents (Knez et al., 2023) and redesigned digitalized learning environments in police education (Holmgren et al., 2019). University teachers' views of what makes a successful learning environment have themselves shifted as a result of these experiences (Lundberg and Stigmar, 2023). This rapid normalization of digital teaching raises a pressing question: how should the quality of a digitalized course be judged? International organizations have begun to set out emerging quality standards and support structures for digital higher education (Staring et al., 2022), and Swedish research has started to examine quality from the perspective of students in online programs (Pia, 2026) and from students' views of teacher quality more broadly (Lundberg and Stigmar, 2026). However, these approaches tend to treat quality either as compliance with institutional or international standards or as the outcome of students' experiences. Comparatively little attention has been paid to the faculty members who stand between policy and practice and who must translate general expectations into concrete course designs, assessment tasks and interactions.

That translation is neither automatic nor neutral. Research on Swedish school digitalization has shown that national policy is reinterpreted locally and that contextual factors, including the size and resources of the organization, shape what policy becomes in practice (Gustafsson, 2022). Policy texts also tend to describe teachers' digital competence in vague terms, which leaves individual educators to decide what "adequate" competence means (Olofsson et al., 2020; Lindfors and Olofsson, 2023). In higher education, recent doctoral work on digital assessment shows that teachers' understanding of digital assessment is shaped by the context in which they work, so that the same tools can support quite different practices (Naimi-Akbar, 2026). These findings suggest that course quality cannot be evaluated adequately without understanding how faculty interpret policy, how they are supported, and what constraints they face. A further dimension of quality has received limited attention in the education literature: the security and reliability of the digital systems on which courses depend. As courses, assessments and student records move onto connected platforms, the protection of data in transmission and storage becomes a condition of trustworthy teaching. Technical work on secure data transmission and integrated cybersecurity in connected industrial systems shows how encryption, secure architectures and real-time monitoring protect sensitive data (Bhalekar and Bamniya, 2025; Bhalekar et al., 2025). That work does not examine education, but it offers a useful analogy for thinking about the infrastructure on which digitalized courses depend.

Against this background, the purpose of this paper is to develop a framework for evaluating digitalized course quality that is grounded in Swedish faculty perspectives and linked explicitly to the policy context. The paper addresses three research questions:

1. What dimensions of digitalized course quality are identified in research on Swedish faculty, teacher educators and related stakeholders?
2. How are these dimensions connected to national and international digital education policy?
3. How can these dimensions be combined into a practical framework for evaluating the quality of digitalized courses?

2 Literature review

2.1 Digital education policy in Sweden and Europe

Swedish digital education policy has developed through several phases. Gu and Lindberg (2021) trace this development from early initiatives focused on access to computers and connectivity towards a more comprehensive national digitalization strategy in which digital competence, equity and the organization of teaching are central. Their analysis shows that Swedish policy has been influenced by transnational ideas and by an increasing emphasis on evidence, but that the evidence base for what works in digital education has often been weaker than the policy ambition. This gap between ambition and evidence matters for course quality, because it means that teachers and faculty are frequently asked to implement goals whose practical meaning has not been worked out. At the European level, Conrads et al. (2017) reviewed digital education policies in Europe and beyond and identified key design principles for more effective policy. These principles stress that digital education policies work best when they are part of a holistic vision, when they involve stakeholders, when they invest in teachers' professional development, and when they include monitoring and evaluation from the start. The report warns against policies that concentrate on infrastructure while neglecting pedagogy and capacity building. For the present paper, this distinction is important: a framework for course quality should look beyond whether technology is available and ask whether the conditions for good teaching with that technology are in place. International guidance on quality in digital higher education has also matured. Staring et al. (2022), writing for the OECD, describe emerging quality standards, practices and support structures for digital higher education. They show that quality assurance agencies and institutions are adapting their frameworks to address online and blended provision, often by adding criteria related to course design, learner support, staff development and technology infrastructure. Yet such standards are typically written from an institutional or system perspective. They describe what a quality digital course should contain, but they say less about how faculty experience the work of producing that quality.

2.2 From national policy to local practice

A consistent theme in Swedish research is that policy does not travel unchanged from national documents into classrooms. Gustafsson (2022) studied how a national school digitalization policy was translated by local authorities and found that contextual factors, especially the size of the organization, shaped the way policy was interpreted and enacted. Smaller organizations faced different resource constraints and possibilities than larger ones, which led to different local versions of the same policy. Although Gustafsson's study concerns the school sector, the insight that "size matters" is directly relevant to higher education, where departments and programs differ greatly in staff numbers, technical support and digital maturity. Olofsson et al. (2020) examined the use of digit-

al technology in Swedish schools and the conditions surrounding that use, with the aim of understanding what "adequate digital competence" might mean in a national policy initiative. They argue that the policy concept is open to interpretation and that teachers' digital practices depend heavily on organizational conditions such as access, support and time. Lindfors and Olofsson (2023) extended this line of inquiry into teacher education. Through a content analysis of Swedish teacher education policy, they examined the prerequisites for teacher educators' "dual didactic task": teaching with digital technology while also preparing student teachers to teach with it. They found that professional digital competence was not clearly articulated in policy documents, which placed responsibility on individual teacher educators and institutions to define and develop it.

2.3 Faculty digital competence

Professional digital competence is a recurrent concept in the literature. Tømte et al. (2015) investigated how online teacher education programs in Norway and Sweden prepared student teachers to master professional digital competence. Using the Technological Pedagogical Content Knowledge (TPACK) framework, they showed that the online format itself could become a resource for learning, since teacher educators modelled digital teaching while student teachers experienced it from the learner's side. Their study also indicated that the integration of technological, pedagogical and content knowledge was uneven and depended on how deliberately teacher educators designed their courses. Tomczyk (2024) broadened the perspective by surveying experts from 33 countries about digital competence among pre-service teachers and the curriculum changes needed to develop it. The study highlights global agreement that digital competence must be integrated into curricula rather than treated as an add-on, while also noting national differences in priorities and readiness. For Swedish higher education, this international perspective underlines that digital competence is not only a matter of individual skill but also of curriculum design and institutional priority.

2.4 Pedagogical design and learning environments

Research also addresses how digital learning environments are designed and how teaching changes within them. Holmgren et al. (2019) conducted a longitudinal study of teaching and learning in redesigned digitalized learning environments in Swedish police education. Their work shows that redesigning a program around digital environments affected the roles of teachers and students, the organization of activities and the relationship between theory and practice. Importantly, the longitudinal design revealed that the benefits and difficulties of digitalization developed over time, which suggests that course quality should be evaluated as a process rather than at a single moment. Lundberg and Stigmar (2023) explored university teachers' shifting views of successful learning environments in the future. Their findings indicate that teachers increasingly see learning environments as flexible combinations of physical and digital spaces, and that they value interaction, student activity and pedagogical intentionality over technology for its own sake. This shift in faculty thinking is significant for evaluation: it implies that faculty themselves are developing more sophisticated criteria for quality than those captured by simple measures of technology use.

2.5 Assessment in digital settings

Assessment is one of the most consequential and least examined aspects of digitalized courses. Naimi-Akbar (2026) explored teachers' understanding of digital assessment in Swedish higher education and the ways in which context shapes assessment practice. The dissertation shows that teachers' conceptions of what digital assessment is and what it is for vary considerably, and that

institutional, disciplinary and technical conditions influence whether digital assessment supports learning or merely replicates traditional examination online. Bergdahl and Nouri (2021) similarly identified assessment as one of the most difficult areas during crisis-prompted distance education. Staring et al. (2022) note that quality standards for digital higher education increasingly address assessment integrity and design. Together these sources suggest that assessment is a critical quality dimension, yet the number of studies directly addressing it remains small.

2.6 Student perspectives on quality and teaching

Student perspectives provide a necessary counterpoint to faculty views. Pia (2026) examined student perspectives on the conditions for experiencing quality in online learning environments within a Swedish teacher program. The study highlights the importance of structure, clear communication, teacher presence and opportunities for interaction. Lundberg and Stigmar (2026) used Q methodology to study social sciences students' perspectives on teacher quality in Swedish higher education and found that students hold distinct and sometimes competing views of what constitutes a good teacher. These studies remind us that quality is experienced differently by different groups and that faculty-based frameworks should remain open to student evidence.

2.7 Infrastructure and data security

Finally, a small body of technical literature addresses the security of connected digital systems. Bhalekar and Bamniya (2025) proposed a cryptography-based encryption and decryption scheme for secure data transmission in industrial Internet of Things systems, while Bhalekar et al. (2025) described an AI-driven approach to secure smart manufacturing that integrates database indexing, industrial cybersecurity and real-time analytics. These studies are set in manufacturing and do not investigate educational platforms or the people who use them. They are included as contextual sources because they address a problem that digitalised courses share: the secure transmission and storage of sensitive data across networks. Learning management systems and digital examination platforms also hold sensitive material, such as student work, grades and personal data. The analogy has limits, however. Educational platforms are usually supplied by vendors and run by central IT units rather than built by faculty. The main risks concern academic integrity and student privacy rather than industrial disruption. Faculty and students also judge these systems by trust and usability as much as by technical performance. The technical studies are therefore used to inform, not to evidence, the security element of the framework.

2.8 Research gap

The literature reveals four gaps. First, policy research and classroom research are rarely connected in a single evaluative model. Second, quality frameworks for digital higher education tend to be institution-centered and pay limited attention to faculty experience. Third, digital assessment is under-researched relative to its importance. Fourth, the infrastructure and security conditions of digital teaching are seldom integrated into pedagogical discussions of quality. The present study responds to these gaps by synthesizing the available evidence into a faculty-centered framework that links policy to classroom practice.

3 Methodology

3.1 Research design

This study used a qualitative evidence synthesis design. Qualitative evidence synthesis brings together findings from existing studies and documents in order to build interpretations and models that go beyond any single source. The design was chosen because the aim was conceptual, namely to develop an evaluative framework, and because the relevant Swedish evidence is spread across different educational sectors, research traditions and document types. A synthesis approach allowed policy analyses, empirical studies of faculty and students, international quality standards and technical studies of digital infrastructure to be examined side by side and connected through a common analytical lens. The study adopted an interpretive stance. Faculty perspectives were treated not as a single fixed viewpoint but as the outcome of interactions between professional understanding, institutional conditions and policy expectations. This stance follows the insight in the reviewed literature that policy is translated and reshaped at local level (Gustafsson, 2022) and that teachers' practice is contextually shaped (Naimi-Akbar, 2026).

3.2 Inclusion logic

Sources were retained for analysis if they met at least one of the following conditions: (a) they reported empirical evidence on faculty, teacher educators or teachers working with digital teaching in Sweden; (b) they analyzed Swedish, European or international digital education policy or quality standards; (c) they reported student perspectives that could be compared with faculty views; or (d) they addressed data security in networked systems in a way that could inform, by analogy, the technical conditions of digital teaching. Sources meeting only condition (d) were treated as contextual and analyzed separately from the education evidence. All seventeen sources met at least one condition, and none was excluded.

3.3 Data extraction

A structured extraction form was used for each source. The form recorded bibliographic details, document type, country and educational setting, the main focus of the source, the stakeholder group whose perspective was reported (faculty, students, policy actors, experts or technical systems), and the main findings or arguments relevant to course quality. The extracted information was then used to construct the overview of sources reported in Table 1.

3.4 Analysis

Analysis proceeded in three stages. In the first stage, a provisional set of quality dimensions was derived deductively from the European design principles for digital education policy (Conrads et al., 2017) and the OECD overview of quality standards in digital higher education (Staring et al., 2022). These documents suggested initial categories for policy, infrastructure, staff development, course design, assessment and learner support. In the second stage, the extracted findings from all sources were coded inductively. Statements about what supports or undermines the quality of digital teaching were grouped, compared and refined. Where inductive codes did not fit the provisional categories, the categories were adjusted. For example, the provisional category of infrastructure was broadened to include data security after coding the technical sources, and staff development was reframed as faculty professional digital competence to reflect the language of Swedish policy research (Olofsson et al., 2020; Lindfors and Olofsson, 2023). In the third stage, each source was coded for the

presence or absence of each final dimension. A dimension was coded as present when the source reported findings, arguments or standards that addressed that dimension substantively, not merely in passing. A single source could be coded for several dimensions. The resulting matrix was used to calculate the frequency with which each dimension appeared in the corpus. These frequencies are descriptive and indicate the attention given to each dimension in the evidence base; they are not measures of importance.

4 Results

The synthesis produced six dimensions of digitalized course quality, which together form the Policy-to-Classroom Quality (P2C-Q) framework. This section first describes the evidence base, then reports how often each dimension appears in the corpus, and finally presents the framework with its evaluation questions and indicators.

4.1 Characteristics of the evidence base

Table 1 summarizes the seventeen sources, their type, setting and focus, and the quality dimensions for which each was coded. The dimension codes are: D1 policy alignment and governance; D2 institutional infrastructure, support and data security; D3 faculty professional digital competence; D4 pedagogical and course design; D5 digital assessment and feedback; and D6 student experience and interaction.

Table 1. Characteristics of the reviewed sources and dimensions coded.

Source	Type	Setting	Main focus	Dimensions
Naimi-Akbar (2026)	Doctoral dissertation	Sweden, higher education	Teachers' understanding of digital assessment and its contextual shaping	D2, D3, D4, D5
Lundberg & Stigmar (2026)	Journal article	Sweden, higher education	Students' perspectives on teacher quality (Q methodology)	D3, D4, D6
Pia (2026)	Degree thesis	Sweden, teacher programme	Student perspectives on quality in online learning	D2, D4, D6
Bhalekar & Bamniya (2025)	Conference paper	International, industrial IoT (contextual technical source)	Encryption scheme for secure data transmission	D2
Bhalekar et al. (2025)	Journal article	International, smart manufacturing (contextual technical source)	Integrated cybersecurity and real-time analytics	D2
Tomczyk (2024)	Journal article	33 countries, teacher education	Experts' views on digital competence and curriculum change	D1, D3
Lundberg & Stigmar (2023)	Journal article	Sweden, higher education	University teachers' views of future learning environments	D3, D4, D6
Lindfors & Olofsson (2023)	Journal article	Sweden, teacher education	Professional digital competence in teacher education policy	D1, D3

Source	Type	Setting	Main focus	Dimensions
Knez et al. (2023)	Journal article	Sweden, medical education	Residents' and teachers' perceptions of digital national courses	D2, D4, D6
Staring et al. (2022)	Working paper (OECD)	International, higher education	Emerging quality standards for digital higher education	D1, D2, D4, D5, D6
Gustafsson (2022)	Journal article	Sweden, school sector	Local translation of national digitalisation policy	D1, D2
Bergdahl & Nouri (2021)	Journal article	Sweden, school sector	Teachers' experience of crisis-prompted distance education	D2, D3, D4, D5, D6
Gu & Lindberg (2021)	Book chapter	Sweden, education policy	Development of Swedish digital education policy	D1
Olofsson et al. (2020)	Journal article	Sweden, school sector	Digital technology use and adequate digital competence	D1, D2, D3
Holmgren et al. (2019)	Conference paper	Sweden, police education	Longitudinal study of redesigned digital learning environments	D2, D4, D6
Conrads et al. (2017)	Policy report (EU)	Europe and beyond	Design principles for digital education policy	D1, D2, D3
Tømte et al. (2015)	Journal article	Norway and Sweden, teacher education	Online teacher education and TPACK	D3, D4

As Figure 1 shows, the corpus is dominated by peer-reviewed journal articles, which account for 10 of the 17 sources (58.8%). Conference papers, theses and policy or working reports each account for 2 sources (11.8% each), and one source (5.9%) is a book chapter. The corpus is also recent: 13 of the 17 sources (76.5%) were published from 2021 onwards, and three were published in 2026, which means that the framework draws on current evidence from the post-pandemic period.

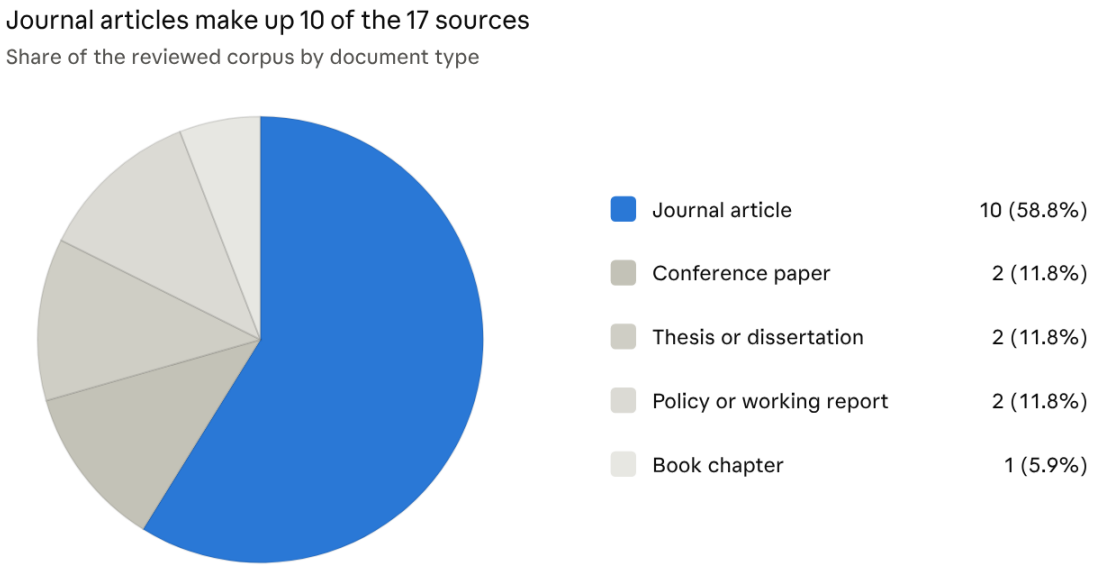


Figure 1. Distribution of reviewed sources by document type (n = 17).

4.2 Frequency of quality dimensions

Figure 2 shows how many sources addressed each dimension. Institutional infrastructure, support and data security was the most frequently addressed dimension, appearing in 11 sources (64.7%). Faculty professional digital competence and pedagogical and course design each appeared in 9 sources (52.9%). Policy alignment and governance and student experience and interaction each appeared in 7 sources (41.2%). Digital assessment and feedback was addressed in only 3 sources (17.6%).

Because two of the eleven sources coded for infrastructure are the technical studies, the frequencies were also calculated for the 15 education sources alone. On that basis, infrastructure and support, faculty digital competence and pedagogical design are tied as the most frequently addressed dimensions (9 of 15 sources each, 60.0%). Policy alignment and student experience follow (7 of 15 each, 46.7%), and digital assessment remains the least addressed (3 of 15, 20.0%).

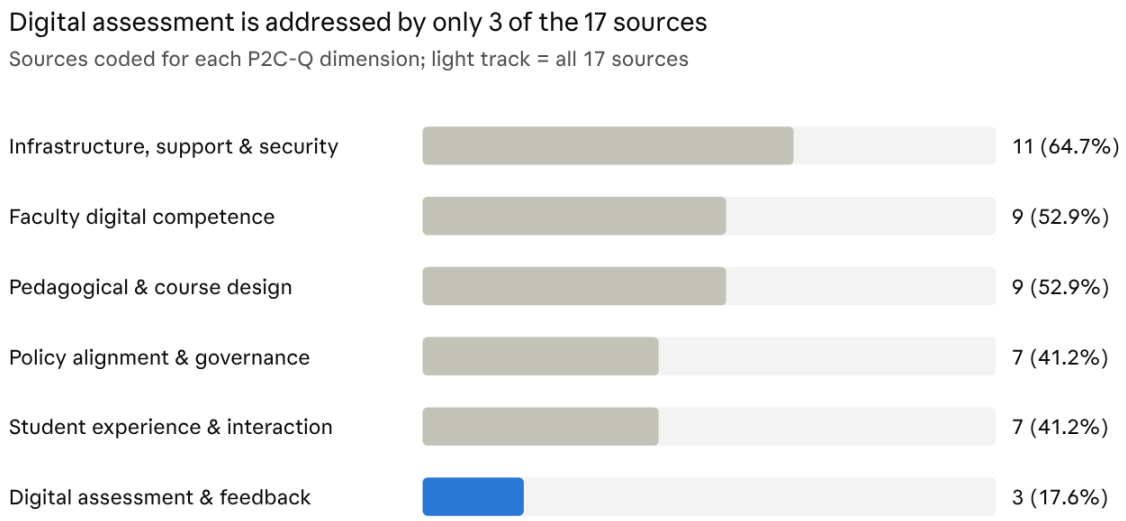


Figure 2. Frequency of P2C-Q quality dimensions across the reviewed sources (n = 17).

Figure 1 and Figure 2 are based on the author's coding of the reference corpus (the coding matrix in Table 1). The counts in Figure 2 include the two technical sources; the frequencies based on the 15 education sources alone are given above.

Three patterns stand out. First, infrastructure and support is the most widely discussed condition of quality. It appears in policy reports (Conrads et al., 2017; Staring et al., 2022), in studies of local policy translation (Gustafsson, 2022; Olofsson et al., 2020), in empirical studies of teaching (Bergdahl and Nouri, 2021; Holmgren et al., 2019; Knez et al., 2023), in student-focused work (Pia, 2026) and in the technical studies on secure data handling (Bhalekar and Bamniya, 2025; Bhalekar et al., 2025). Second, faculty competence and pedagogical design appear together in many sources, which suggests that the literature treats them as closely linked: competence becomes visible in design. Third, assessment is markedly under-represented. Only Naimi-Akbar (2026), Bergdahl and Nouri (2021) and staring et al. (2022) address it substantively, even though these sources describe assessment as among the most demanding aspects of digital teaching.

4.3 Faculty perspectives across the dimensions

The synthesis showed that faculty perspectives are present across all six dimensions, but in different ways. In the policy dimension, faculty appear mainly as those who must interpret broad and sometimes vague expectations. Policy texts describe digital competence in general terms and leave its operational meaning to educators and institutions (Olofsson et al., 2020; Lindfors and Olofsson, 2023), while national strategies have developed faster than the evidence on which they rest (Gu and Lindberg, 2021). In the infrastructure dimension, faculty perspectives emphasize support, time and organizational conditions rather than equipment alone. The quality of crisis-prompted teaching depended on the support teachers received (Bergdahl and Nouri, 2021), and local contexts, including organizational size, shaped what was possible (Gustafsson, 2022). In the competence and design dimensions, faculty are portrayed as active designers whose expertise develops over time. Teacher educators modelled digital teaching for their students (Tømte et al., 2015), university teachers developed more nuanced views of successful learning environments (Lundberg and Stigmar, 2023), and police education teachers adapted their roles across a longitudinal redesign (Holmgren et al., 2019).

4.4 The P2C-Q framework

Table 2 presents the resulting framework. For each dimension it states the guiding evaluation question, gives example indicators that course leaders and quality units can use, and lists the number of supporting sources.

Table 2. The Policy-to-Classroom Quality (P2C-Q) framework for evaluating digitalized courses.

Dimension	Guiding evaluation question	Example indicators	Supporting sources (n)
D1 Policy alignment and governance	Is the course aligned with national and institutional digital education goals, and have those goals been translated into clear local expectations?	Local interpretation of policy documented; course goals linked to digital competence aims; faculty involved in local policy decisions	7
D2 Institutional infrastructure, support and data security	Do faculty and students have reliable, secure systems and timely pedagogical and technical support?	Platform availability; access to support staff; time allocated for digital course development; data encryption and secure handling of student records	11
D3 Faculty professional digital competence	Do faculty have the competence to teach with digital tools and to model good digital practice?	Participation in professional development; use of TPACK-informed planning; peer collaboration on digital teaching	9
D4 Pedagogical and course design	Is the course designed intentionally for its digital or blended format rather than transferred from campus?	Constructive alignment in the digital format; clear structure; variation in activities; planned interaction	9
D5 Digital assessment and feedback	Do assessment tasks use the digital format to support learning, ensure integrity and provide timely feedback?	Shared understanding of digital assessment purposes; variety of assessment forms; feedback turnaround; integrity safeguards	3

Dimension	Guiding evaluation question	Example indicators	Supporting sources (n)
D6 Student experience and interaction	Do students experience presence, communication and meaningful interaction in the course?	Student-teacher and student-student interaction; perceived teacher presence; accessibility; student feedback used in revision	7

The framework is intended to be read from top to bottom as a chain that runs from policy to classroom. Policy alignment (D1) sets expectations; infrastructure and support (D2) create the conditions for meeting them; faculty competence (D3) enables educators to use those conditions; and design, assessment and student experience (D4 to D6) are the classroom-level expressions of quality. A weakness at an upper level is likely to limit quality at the lower levels, regardless of the effort of individual teachers.

5 Discussion

This study set out to develop a framework for evaluating digitalized course quality that is grounded in Swedish faculty perspectives and linked to the policy context. The synthesis of seventeen sources produced the six-dimension P2C-Q framework. This section discusses the main findings in relation to the research questions, considers their implications for policy and practice, and reflects on the limitations of the study.

5.1 Quality as translation rather than technology

The first research question asked which dimensions of digitalized course quality are identified in research on Swedish faculty and related stakeholders. The most important finding is that quality is described far more often in terms of conditions, competence and design than in terms of technology as such. Even the most frequently coded dimension, infrastructure, was rarely about hardware alone. Instead, it concerned support, time, organizational capacity and the reliability and security of systems. This finding is consistent with the European warning that digital education policies fail when they concentrate on equipment and neglect capacity building (Conrads et al., 2017).

5.2 The policy-to-classroom chain

The second research question asked how the dimensions connect to national and international policy. The framework proposes a chain in which policy alignment, infrastructure and faculty competence act as enabling conditions for the classroom-level dimensions of design, assessment and student experience. The evidence suggests that this chain is often weak at its upper links. Swedish policy documents describe digital competence in ways that are open to interpretation (Olofsson et al., 2020), and teacher education policy offers limited guidance on the dual didactic task of teaching with and about digital technology (Lindfors and Olofsson, 2023). Policy development has also outpaced the evidence on what works (Gu and Lindberg, 2021).

5.3 Faculty competence develops through design and over time

The synthesis showed that faculty competence and pedagogical design are closely intertwined. Tømte et al. (2015) found that online teacher education could itself develop professional digital competence, because teacher educators modelled digital practice in the way they designed courses. Holmgren et al. (2019) showed that teachers' roles changed over the course of a longitudinal redesign, and Lund-

berg and Stigmar (2023) found that university teachers' views of successful learning environments shifted as their experience grew. These findings suggest that competence is not a fixed precondition but something that develops through the practice of designing and teaching digital courses.

5.4 The neglect of digital assessment

The most striking result is the limited attention to digital assessment. Only 3 of the 17 sources addressed it substantively, yet those sources indicate that assessment is among the most difficult and consequential parts of digital teaching. Naimi-Akbar (2026) shows that teachers' understanding of digital assessment varies widely and is shaped by context, so that the same tools may support learning-oriented assessment in one setting and simple replication of traditional examination in another. Bergdahl and Nouri (2021) identified assessment as a major challenge during distance teaching, and staring et al. (2022) note that quality standards increasingly address assessment design and integrity.

5.5 Data security as a dimension of educational quality

Including data security within the infrastructure dimension is a distinctive feature of the framework, and it needs careful justification. Educational quality literature rarely treats security as a pedagogical concern, yet digital courses depend on the transmission and storage of sensitive data, including student work, grades and personal information. The technical studies in the corpus show how secure transmission through encryption and decryption schemes (Bhalekar and Bamniya, 2025) and integrated approaches combining database indexing, cybersecurity and real-time analytics (Bhalekar et al., 2025) protect connected industrial systems. These studies do not examine education, so their relevance here is by analogy rather than direct evidence. The analogy holds in one respect: both settings involve networked systems that move and store sensitive data and need continuous monitoring. It breaks down in others. Educational platforms are usually vendor-managed, governed by data protection rules for students, and maintained by central IT units rather than by faculty. Their main risks concern academic integrity and privacy rather than production disruption. From a faculty perspective, security therefore matters less as a technical design task than as a condition of trust. Teachers need confidence that digital examinations are protected and that student data are handled responsibly. Without that confidence, they may avoid innovative digital assessment. The framework accordingly frames security indicators in terms of faculty confidence and institutional procedures rather than technical specifications.

5.6 Complementing faculty and student perspectives

Although the framework is centered on faculty, the synthesis shows that student perspectives remain essential. Faculty and students agree on the importance of interaction, presence and accessibility, but they do not always weigh these aspects in the same way. Knez et al. (2023) found that both teachers and residents appreciated the accessibility of digital national courses while noting limitations in interaction. Pia (2026) found that students in an online teacher program valued structure, communication and teacher presence, and Lundberg and Stigmar (2026) showed that students hold several distinct views of teacher quality. A faculty-centered framework must therefore remain open to student evidence, particularly in the student experience dimension, where students are the primary source of information.

5.7 Implications for practice

The framework has several practical implications. For national policymakers, it suggests that digital education policy should define digital competence more concretely and include mechanisms for supporting local translation, especially in smaller organizations with limited resources (Gustafsson, 2022). For institutions, it suggests that quality assurance of digitalized courses should evaluate institutional conditions alongside course content and should allocate time for faculty development. For quality assurance units, it offers a set of evaluation questions and indicators that can be adapted into review templates. For course leaders and faculty, it provides a structured tool for self-evaluation and for identifying where support is needed.

6 Conclusion

This paper has developed the Policy-to-Classroom Quality (P2C-Q) framework for evaluating digitalized courses, based on a synthesis of seventeen sources on Swedish faculty perspectives, digital education policy, international quality standards, with two technical studies on data security used as contextual sources. The framework contains six dimensions: policy alignment and governance; institutional infrastructure, support and data security; faculty professional digital competence; pedagogical and course design; digital assessment and feedback; and student experience and interaction. Three conclusions follow. First, the quality of a digitalized course is produced in the translation between policy and practice, and faculty are the central interpreters in that translation. Evaluation should therefore examine the conditions under which faculty work, not only the products of their work. Second, the dimensions form a chain in which weaknesses at the policy, infrastructure or competence levels limit what can be achieved in the classroom. Evaluation that focuses only on the course itself risks attributing systemic problems to individual teachers. Third, digital assessment is seriously under-represented in the evidence base, addressed by only 3 of 17 sources, despite being one of the most demanding aspects of digital teaching. Assessment should be made a visible and separate focus of quality work.

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